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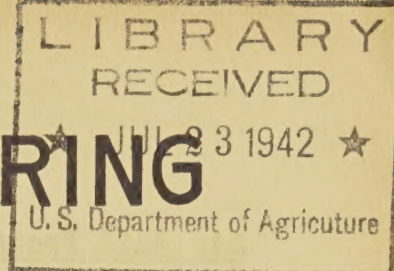


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# CURRENT LITERATURE IN

# AGRICULTURAL ENGINEERING

BUREAU OF AGRICULTURAL CHEMISTRY AND ENGINEERING  
UNITED STATES DEPARTMENT OF AGRICULTURE



WASHINGTON, D.C.

Vol. 11, No. 5

December, 1941

## Accidents.

The accident barometer. Prepared by the Statistical Bureau  
National Safety Council. National safety news.  
v.45, no.2. February 1942. p.14-15.

## Agriculture.

Agriculture of Jamaica.... By Kathryn H. Wylie. Foreign  
agriculture. v.6, no.4. April 1942. p.121-  
146. Illustrations.

Annual report for fiscal year 1940-1941. Rio Piedras, Puerto  
Rico, 1941. 71p. University of Puerto Rico.  
Agricultural experiment station.

1942 farm legislation. By Arthur B. Jebens. Land policy  
review. v.5, no.3. March 1942. p.31-33.

The plow and the sword. Blacksburg, Va., n.d. 4p.  
Virginia. A. & M. college and Polytechnic institute. Agricul-  
tural extension division. Circular E-353.

## Air Conditioning.

How to figure duct sizes. By William Goodman. Heating,  
piping & air conditioning. v.14, no.2. February  
1942. p.107-110. New chart combines latest data  
for sizing both round and rectangular ducts.

Relationship of air conditioning to rust prevention. Lubrication.  
v.28, no.2. February 1942. p.13-24.

## Air Raid Protection.

Air raid shelter policy. Indian engineering. v.110, no.6.  
December 1941. p.144.

Brick masonry and other bomb shelters tested and compared by U. S.,  
Britain. Brick & Clay record. v.100, no.2.  
February 1942. p.31-33. Reinforced brick masonry air  
raid shelters prove successful under actual bombings in England.  
Gives specifications.



Air Raid Protection. (Cont'd.)

How bomb proof shelters are made. Brick & clay record.  
v.100, no.3. March 1942. p.32,34,36. Reports  
from London point out that REM construction offers minimum  
resistance to blast and splinters. Descriptions are  
given for three types of shelters.

What makes a good bomb shelter? By Col. George J. B. Fisher.  
Vital speeches of the day. v.8, no.9. February 15,  
1942. p.285-286.

Alcohol Fuel.

Power alcohol. Australian sugar journal. v.33, no.9.  
December 11, 1941. p.341.

Power alcohol from wheat. Agricultural gazette of New South  
Wales. v.52, no.9. September 1, 1941.  
p.449-450.

'Second grade' power alcohol. Australian sugar journal.  
v.33, no.9. December 11, 1941. p.341. Sale  
of so-called second grade power alcohol in Melbourne.

Barns.

Is the run-type barn practical for Wisconsin? In What's  
new in farm science. Part 1, annual report of the director  
Madison, Wis., 1941. p.49-50. Wisconsin.  
Agricultural experiment station. Bulletin no.453.

Open or closed dairy barns? By E. E. Heizer and S. A. Witzel.  
Successful farming. v.39, no.11. November 1941.  
p.14-15, 28-29.

Brooders, Electric.

Electric brooder for pigs. Successful farming. v.40,  
no.3. March 1942. p.41.

Electric brooding: Tests and results. By C. E. Lee.  
Everybody's poultry magazine. v.47, no.1. January  
1942. p.6, 14-16, 25-26. Observations on insulation  
qualities, current consumption, and ventilation conditions on  
eight types of electric brooders that were subjected to test.



Brooders, Electric. (Cont'd.)

Les éleveuses électriques. By W. J. Lavigne. Le bulletin  
des agriculteurs. v.38, no.3. March 1942. p.29.  
Electric brooders.

Building Construction.

Blister buildings: new constructional method. Indian engineer-  
ing. v.110, no.6. December 1941. p.165.

Plotting the curve of building costs. Federal home loan bank  
review. v.8, no.6. March 1942. p.192-195.  
Illustrations. Sharp increase in building costs causes  
mortgage lenders to keep watchful eye on their appraisal and  
mortgage lending standards. Despite general character of price  
advances, analysis shows large variance of trends for differ-  
ent building materials as well as considerable local variations.  
This serves to emphasize need for thorough study before changes  
in lending standards are made.

Building Materials.

Cement-sawdust mixture experience. Heard's dairyman.  
v.87, no.2. January 25, 1942. p.35.

Government, science, and industry search for substitute materials  
By Ruth C. Leslie. Domestic commerce. v.28, no.22.  
November 27, 1941. p.9-10.

Interlocking plastic strips replace metal trip. Scientific  
American. v.166, no.2. February 1942. p.80.

Extruded plastic shapes are finding ever widening use in  
variety of applications where they replace metals. One of  
latest developments in this field is edging material. Illustrated  
is new strip form, produced in long lengths, locks into  
position without use of adhesive, screws or other means of  
attachment. Wherever slot of proper width can be provided, this  
"Interlox" section can be quickly and easily applied. When the  
material is pressed into place, barbs hold it in position. The  
material used in the "Interlox" strip is Tenite II, produced  
by the Tennessee Eastman Corporation.

New ways to save steel in concrete. Architectural record.  
v.91, no.2. February 1942. p.59-60. Illustrations.



### Conservation of Resources.

A method of estimating the economic effects of planned conservation on an individual farm. By Arthur C. Bunce and George W. Collier. Washington, U. S. Govt. print. off., 1942. 28p. U. S. Department of agriculture. Miscellaneous publication no.463.

Soil moisture conservation. By R. E. Stephenson. California cultivator. v.89, no.3. February 7, 1942. p.77.

### Cotton Gins and Ginning.

Modernizing wooden gin stands for higher saw speeds, greater capacity and better sample. Stoneville, Mississippi, 1942. 1p. U. S. Department of agriculture. Agricultural marketing service. Cotton ginning laboratory. ACE 137.

### Crops (Drying).

Design new crop blower. In What's new in farm science. Part 1, annual report of the director. Madison, Wis., 1941. p.54. Wisconsin, Agricultural experiment station. Bulletin no.453.

Experiments with dried fruit in storage. By W. R. Barger. Ice and refrigeration. v.101, no.5. November 1941. p.399-402.

Sweet potatoes dried on farm solves old problem. By L. M. Ware. Progressive farmer. v.56, no.12 December 1941. p.12, 52.

### Dams.

General features of Friant Dam. Construction layout of an important unit in the Central Valley Project. By R. B. Williams. Civil engineering. v.12, no.2. February 1942. p.81-83. Illustrations. Friant Dam is well up in running among largest dams ever built. Located in foothills of High Sierras, it is important link in California's Central Valley Project, Shape of dam and surrounding topography dictated use of temporary steel-trestle type of construction plant. This plant, like cableway type, has been improved immensely in recent years over its early applications, and design now in use at Friant represents accumulation of good features gained from experience, combined with many outstanding details that are original with this project. Paper aims to cover construction features of undertaking.



### Dehydration.

Why ship water? By J. C. Furnas. Country gentleman.  
v.111, no.10. October 1941. p.7. 44-45.  
Discussion of dehydration of foodstuffs.

### Diesel engines.

A new theory of combustion in diesel engines, By  
Max G. Fiedler. Journal of the Franklin Institute.  
v.233, no.1. January 1942. p.17-39.

New theory of combustion in diesel engines. By Max G.  
Fiedler. Journal of the Franklin Institute.  
v.233, no.2. February 1942. p.143-171.

### Drainage.

Automatic device to ensure permanently open mole drain outlets.  
By N. Lamont. New Zealand Journal of Agriculture.  
v.63, no.4. October 15, 1941. p.332-333.

Fields plowed in beds for drainage. Soil Conservation.  
v.7, no.9. March 1942. p.277.

### Dryers and drying.

Seed drier uses infrared electric lamps. By John E. Nicholas  
and H. B. Musser. Agricultural engineering.  
v.22, no.12. December 1941. p.421-423, 426.

### Electric lines.

Cost considerations in rural line design. By E. P. Weber,  
Electrical world. v.116, no.10. September 6, 1941.  
p.720-721, 723. Fifteen companies in five Midwestern  
states give cost and design information on typical rural lines.

### Electricity on the farm.

Farmers helped to get electricity. In Security at the grass  
roots; a report of cooperative extension work in agriculture  
and home economics, 1940-41. Washington, D.C.,  
Govt. print. off., 1941. p.32.

Food to win the war must come from electrified farms.  
Rural electrification exchange. v.5, no.1.  
First Quarter, 1942. p.6-7. Louisiana Power & Light  
Company's Farm Service Program for 1942 will help its  
customers to win their battle for increased production.

Rural areas. By H. Greaves. Electrical review.  
v.129, no.3343. December 19, 1941. p.707-708.  
Post-war electrical development.



### Engineering.

Engineering courses. By Henry S. Rogers. Mechanical  
engineering. v.64, no.3. March 1942.  
P.208-210.

### Erosion Control.

Grasses in the conservation of soil and wildlife. By Edward H.  
Graham. Washington, D.C. 1941. 19p. Mimeographed  
U.S. Department of Agriculture. Soil conservation service.

Program of the United States Soil Conservation Service.  
By H. H. Bennett. International institute of agri-  
culture. Monthly bulletin of agricultural science  
and practice. v.32, no.10. October, 1941.  
p.323T-330T. Program of United States Soil  
Conservation Service is explained. After short  
historical introduction dealing with creation of  
Service and its place amidst agencies of Federal  
Government, action on five different fronts: research,  
surveys and mapping, information and education,  
direct assistance to farmers, land purchase and  
development, is treated briefly in order to show part  
played by each of these branches in total program.

Security at the grass roots: A report of cooperative extension  
work in agriculture and home economics, 1940-41.  
Washington, D.C., Govt. print. off., 1941. 62 p.

### Fans.

Exhaust fans. By K. G. Patrick. Successful farming.  
v.39, no.11. November 1941 p.30, 36.

How to apply fan test data. Part VIII By Emory M. Komler.  
Industrial power. v.42, no.3. May 1920.  
p.70-72, 106, 108. Instructions tell how to use fan  
test data for determining capacity and horsepower requirements  
under conditions different from tests. Also, fundamental laws  
of fan operation are explained and demonstrated.

### Farm buildings.

Plans for concrete farm buildings. Chicago, Portland cement  
association, 1942. 56p.

### Farm buildings, Remodeling.

Remodeling barns into laying houses. By John Vanderwort.  
Everybody's poultry magazine. v.47, no.2.  
February 1942. p.10-11.



Farm machinery and equipment.

- Be sure you get repairs that fit and last. Montana  
farmer. v.20, no.13. March 1, 1942. p.6.
- Case completes century of service to agriculture. Farm  
implement news. v.63, no.1. January 8, 1942.  
p.22-27, 54,56. Illustrations.
- Combine drills. By W. H. Cashmore. Great Britain.  
Agriculture. Journal of the ministry of agriculture.  
v.48, no.3. December 1941. p.186-187.  
Disadvantages: (1) Combination of seed drill, which normally  
has long life, and fertilizer distributor, which has com-  
paratively high depreciation, may result in one part  
deteriorating more quickly than other. If, however,  
after each sowing season, fertilizer mechanism is  
completely dismantled, cleaned and oiled, this difficulty  
will be overcome. (2) Rate of seed drilling is slowed down  
because of extra time taken to fill fertilizer. This  
difficulty can be counteracted to some extent by  
having fertilizer placed just where it will be required  
in field. (3) Extra weight, compared with seed drill alone,  
causes uneven sowing depths, and there is risk of damage  
to drill chassis and axle. (4) Only granular fertilizer  
can be sown with any degree of accuracy, because of  
design of distributing mechanism.
- Common binder head and knotter head troubles. By  
H. H. Musselman and A. J. Bell. East Lansing,  
Michigan, 1942. 14p. Michigan state college.  
Extension division. Extension bulletin no.134.
- Farm equipment profits will be moderately lower. Magazine  
of Wall Street. v.69, no.9. February 7, 1942.  
p.494, 516
- Field machines of 1942. Market growers journal.  
v.70, no.3. February 1, 1942. p.48-49  
Illustrations.
- Getting set for war in the fields. By Glenn Adams.  
Western farm life. v.44, no.5. March 1, 1942.  
p.3,23.
- The J. I. Case centennial. Northwest farm equipment journal.  
v.56, no.3. March 1942. p.23-24
- Keep 'em rolling down on the farm. Utah farmer.  
v.61, no.13. February 25, 1942. p.10.  
10-point program on farm machinery repair outlined by war  
boards at county meetings.



Farm machinery and equipment. (Cont'd.)

Machinery in peanut production. By J. C. Oglesbee, Jr. and  
J. L. Shepherd. Agricultural engineering.  
v.23, no.1. January 1942. p.23-24.

Machinery patriotism means care and repair.  
By Hobart Beresford. Implement record v. 39, no. 2.  
February 1942. p.11,66. Timely tips for  
making equipment last longer.

Machinery repair vital. By Joe Crosby. California  
cultivator v.89, no.3. February 7, 1942.  
p.51,63.

Machinery's place in war. By Frank J. Zink.  
Implement & tractor. v.57, no.5. February  
28, 1942. p.12-13. For labor to improve its  
efficiency in agriculture it must have machinery  
geared with it. It is only with machinery that  
labor can lay substantial claims to being more  
efficient.

OPM order provides rating for farm machinery, repair parts.  
Sugar bulletin. v.20, no.8. January 15, 1942.  
p.62-63. (Official release)

OPM regulations and recommendations. By DeWitt C. Wing.  
Dakota farmer. v.62, no.2. January 24, 1942  
p.23. New order issued by the Office of Production  
Management guarantees supply of new farm implements to  
supplement equipment now on farms in production and  
harvest of 1942 crops.

Our farm forces require good equipment too. Oregon farmer.  
v.65, no.5. February 26, 1942. p.98-99.  
"Food will win the war and write the peace."

Points and parts of machinery wear. Wisconsin  
agriculturist and farmer. v.69. no.2.  
January 24, 1942. p.5.

Program for production. Quotas for farm equipment have been  
determined by 1942 food goals and increasing need for  
war tools. Implement & tractor. v.57, no.2.  
January 17, 1942. p.16,20,22.

Program for repair for farm machinery. Maryland farmer.  
v.26, no.1. January 1942. p.16. Program  
for Maryland is getting well started.

Protect your farm machinery. California cultivator.  
v.89, no.3. February 7, 1942. p.62.



Farm machinery and equipment. (Cont'd.)

Repair of farm machinery. Washington, D. C. [n.d.].  
16p. Mimeographed. U. S. Department of agriculture.  
Bureau of agricultural chemistry and engineering. Division  
of farm mechanical equipment research. ACE - 143-150.

Urge 'all out' cooperation in National farm repair program.  
Utah farmer. v.61, no.13. February 25, 1942.  
p.3.

Utah farmers and ranchers have a big job to do in the year 1942.  
Utah farmer. v.61, no.13. February 25, 1942.  
p.4-5. War effects on farm machinery. Modern farm  
equipment vital in 'food for freedom' program.

Winter time is repair time. East Lansing, Mich., 1941.  
4p. Michigan. Agricultural extension division.  
Extension folder no.9.

Farm power.

Cost of oxen work lower in small farms. In annual report for  
fiscal year 1940-1941. Rio Piedras, Puerto Rico, 1941.  
p.23-24. University of Puerto Rico. Agricultural  
experiment station.

Farm power. By M. R. Cooper and A. P. Brodell.  
Agricultural situation. v.26, no.2. February 1942.  
p.11-12. Table 1. --Trends in farm employment and produc-  
tion, crop acres, workstock, and motor equipment, on  
farms, 1910-40).

Rural manpower and total war. By Glem T. Barton.  
Land policy review. v.5, no.2. February 1942.  
p.11-13. Full mobilization and use of all labor and  
resources will be needed to meet war-production goals during  
next 2 years. What are these production goals of total war?  
What part does rural manpower play in our effort to achieve  
them? What changes are in prospect for agricultural labor in  
the war years?

Women and tractors replace men and horses. By Francis  
Flood. Ohio farmer. v.189, no.3.  
February 7, 1942. p.10-11.

Food grinders and grinding.

Feed grinder demand to increase. Implement & tractor.  
v.56, no.23. November 8, 1941. p.14-15.

Feed preparation. By Colin Kennedy. Successful farming.  
v.40, no.3. March 1942. p.11, 28-29.  
Grinding or chopping feed.



Feed grinders and grinding.

Small feed mills do the job. Rural electrification news.  
v.7, no.6. February 1942. p.23-25.  
Two interesting stories of successful introduction of feed  
mills to farmers on cooperative lines.

Fences.

Frame your picture house with split rails. By Hi Sibley.  
Better homes & gardens. v.20, no.3. November 1941.  
p.102-103.

Fences, Electric.

Using electric fences to conserve labor and materials.  
Rural electrification exchange. v.5, no.1. First  
Quarter, 1942. p.16.

Fertilizer placement.

Fertilizer placement for sugar cane. In annual report for  
fiscal year 1940-1941. Rio Piedras, Puerto Rico, 1941.  
p.54. University of Puerto Rico. Agricultural experi-  
ment station.

Fibers.

American fibers--another material binding the Americas together.  
By Susan Lydia Bull. Foreign commerce weekly.  
v.6, no.6. February 7, 1942. p.6-7, 31-32.  
Bagging materials. Fibers for twine, rope, and marine  
cordage.

Surface characteristics of cotton fibers as indicated by  
electrophoretic studies. By Arnold M. Sookne and  
Milton Harris. Textile research. v.11, no.7.  
May, 1941. p.307-312.

Fire protection.

Flaming fluids. Fires in flammable liquids are vicious. Combating  
their menace requires an efficient program of plant pro-  
tection. By G. M. Kintz. National safety  
news. v.45, no.2. February 1942.  
p.22-23, 68-75.

Practical training for auxiliary firemen. By Fred Shepperd.  
Fire engineering. v.95, no.3. March 1942.  
p.134-137. Illustrations. First of a series of  
articles devoted to this important phase of national defense.



Fire protection. (Cont'd.)

Preventing farm fires. By the National Fire  
Protection Association. Board's Dairyman  
v.86, no.19. October 10, 1941. p.604.  
Fires from lightning; Fires from spontaneous ignition;  
Fires from matches and smoking; Fires from electricity;  
Fires from gasoline and kerosene; Fire protection.

Repairs can prevent fires. American lumberman. v.69,  
no.3226. March 21, 1942. p.16. Illustrations.

Flax.

Flax acreage must increase for 1942. Oil, paint and drug  
reporter. v.141, no.3. January 19, 1942.  
p.7, 41.

Floods and Flood control.

Research for flood control data. Many neglected sources will  
yield important information to the patient investigator.  
By Gustav E. Larson. Civil engineering.  
V.12, no.3. March 1942. p.131-134.

Floors.

Hollow floors for radiant heating. By F. E. Markus.  
Heating, piping and air conditioning. v.14, no.3.  
March 1942. p.176. Gives brief description  
of new type of floor construction which incorporates  
integral duct system.

Flow of heat.

Periodic heat flow in building walls determined by electrical  
analogy method. By Victor Paschkis. Heating,  
piping & air conditioning. v.14, no.2.  
February 1942. p.133-138. By new electric  
analogy method, heat flow through two building walls  
was investigated. In one case with 2-in. pine wall  
temperature-time curve on outside surface was known,  
while for other, 13-in. brick wall, amount of heat  
radiated from sun and temperature of surrounding air  
were known. In both cases, heat flow from inside surface  
to air in room, held at constant temperature, was  
desired. Results obtained checked closely with  
thermal measurements conducted at the Asive Research  
Laboratory.

Flow of water and gases.

Flow in expansions in open channels. By A. R. Thomas.  
Proceedings of the Punjab engineering congress.  
Lahore, Kapur art printing works, 1940. p.179-191r.  
Paper no.236.



Flow of water and gasses. (Cont'd)

Flow of fluids through orifices and weirs. In report of the research and extension activities of the engineering schools and departments for the sessions of 1940-1941. Lafayette, Ind., 1941. p.11. Indiana. Purdue university. Engineering experiment station. Research series no.83. Purpose of research is to determine effects of density, surface tension, temperature, and viscosity upon discharge rate through small orifices and weirs.

Stream flow records of Pennsylvania. Harrisburg, 1940. 207p. Commonwealth of Pennsylvania. Department of forests and waters. Division of Hydrography.

Flumes.

Flow at high velocity in a curved rectangular flume. By Jeffrey B. Macphail. Civil engineering. v.12, no.3. March 1942. p.158-159.

Improved adjustable proportional nozzles and open flume outlets. By Pandit K. R. Sharma. Proceedings of the Punjab engineering congress. Lahore, Kapur art printing works, 1940. p.193-223d. Paper no.237.

Investigation of an H-type flume. In report of the research and extension activities of the engineering schools and departments for the sessions of 1940-1941. Lafayette, Ind., 1941. p.25. Indiana. Purdue university. Engineering experiment station. Research series no.83. Purpose: To study accuracy of orifice plate as sampling device used in connection with H-type flume for determining amount of sediment transported in open channels.

Rigid flume module. By K. A. Ghafeer. Indian engineering. v.110, no.3. September 1941. p.80-81.

Heat transmission.

New heat transmission calculation chart. By Walter Kals. Refrigerating engineering. v.42, no.5. November 1941. p.313-316.

Heating.

Air in contact with water. By William Goodman. Heating, piping and air conditioning. v.14, no.3. March 1942. p.169-172. Analyzing air conditioning and heat exchange processes with the psychrometric chart.



Heating. (Cont'd.)

Factors influencing the heat output of radiators. By  
A. C. Davis, W. M. Sawdon and David Dropkin. Heating  
piping and air conditioning. v.14, no.3. March  
1942. p.180-186. Analysis is given of factors  
which affect heat output of radiators. It is clearly  
shown that conditions of test room can be varied  
very materially without affecting rating which radiator  
would be given when that rating is based on maintenance  
of defined temperature at fixed point in room. This  
temperature is specified to be measured by mercury  
thermometer, and it is interesting to note that tempera-  
ture distribution in room can be varied widely and yet  
result in same radiator rating.

New tests reveal importance of prevention of radiant heat loss in  
maintaining human comfort. By F. O. Jordan.  
Air conditioning & refrigeration news. v.35, no.7.  
February 18, 1942. p.10, 11. Much lower air  
temperatures possible with reflective or cooled and heated  
wall surfaces.

Panel heating and cooling performance studies.  
By B. F. Raber and F. W. Hutchinson. Heating,  
piping & air conditioning. v.14, no.2. Febru-  
ary 1942. p.125-132. Paper gives experi-  
mental data for feeling of warmth of 50 subjects in  
reflecting enclosure with air at 60 F and surfaces  
at 57 F, and with no heating other than that due to  
occupants. Investigation was made of surface emissivity  
and its practical significance in design and operation  
of any type of heating system.

Panel heating with hot air. By F. W. Hutchinson.  
Architect and engineer. v.146, no.3.  
September 1941. p.43-46.

Radiation as a factor in the feeling of warmth in convection,  
radiator and panel heated rooms. By F. D. Houghton,  
Carl Gutherlot and E. C. Hach. Heating, piping and  
air conditioning. v.13, no.12. December 1941.  
p.778-785.

Thermodynamic properties of air. By R. V. Gerhart, V. C.  
Brunmer, H. S. Mickley, B. H. Sage, and W. N. Lacey.  
Mechanical engineering. v.64, no.4. April 1942.  
p.270-272.

Wood burning furnaces better. By E. D. Marshall.  
Arkansas farmer. v.44, no.3. March 1942.  
p.9.



Hotbeds and cold frames.

Hotbed construction and management. By W. B. Ward.  
Lafayette, Ind., 1941. 8p. Indiana. Purdue  
university. Extension division. Extension bulletin no.270.

Houses.

Houses off the assembly line. Modern plastics. v.19,no.4.  
December 1941. p.36-37. Discussion of use of  
synthetic resin-bonded plywood and synthetic resin  
adhesives for prefabricated houses.

Low-cost homes. By Stephen H. Chalmers. St. Louis.  
Home Institute, inc., 1941. 39p.

Houses, Remodeling.

Farm home remodeling needed here to make this land productive.  
American lumberman. v.69, no.3222.  
January 24, 1942. p.18-19,25. Illustrations.

Structural economics in remodeling. Architectural record.  
v.91, no.2. February 1942. p.52-58.  
Illustrations show, 1. Foundation details; 21. Concrete  
floors; 3. Lumber floors; 4. Exterior walls; 6. Interior  
partitions.

Insulation.

You can enjoy greater winter comfort in your home and still  
use less fuel. By J. W. Simonds. Southern  
agriculturist. v.72, no.1. January 1942.  
p.30.

Irrigation.

Overhead irrigation. By H. M. L. International sugar  
journal. v.43, no.513. September 1941.  
p.268-269.

Irrigation water.

Irrigation water. The rate of application of irrigation to sugar  
cane. In annual report for fiscal year 1940-1941.  
Rio Piedras, Puerto Rico, 1941. p.54.  
University of Puerto Rico. Agricultural experiment station.

Laboratories.

A service institution. Du Pont magazine. v.36, no.1-2.  
February 1942. p.1-4, 23. Brief outline of  
activities in the technical laboratory of the Du Pont dye-  
stuffs division.



## Laboratories. (Cont'd.)

The western regional research laboratory. By T. L. Swenson.  
Farm and home science. v.3, no.1. March 1942.  
p.12-13. The director of this new laboratory describes  
organization and objectives of research work dealing with  
new uses for apples, alfalfa, fruits, potatoes, poultry pro-  
ducts and by-products, vegetables and wheat.

## Lighting.

Choosing the right lamp for industrial lighting. By H. S.  
Broadbent. Machinery. v.48, no.6. Febru-  
ary 1942. p.148-151. Table 3 gives comparison  
of total lighting costs for typical installation. Fig.1  
shows comparison of illuminating costs elements for four  
types of lamps with power rate of 1 cent per kilowatt-hour.

## Lubrication.

Bearings and lubrication. By R. J. S. Pigott.  
Mechanical engineering. v.64, no.4. April 1942.  
p.259-269. Bearing troubles traceable to design can  
be avoided by engineering study.

Nature of the lubrication process. Lubrication.  
v.28, no.1. January 1942. 12p.

Performance tests for greases. Power plant engineering.  
v.46, no.3. March 1942. p.82-83. While  
desirability of purchasing greases and other lubricants by  
specifications, based on performance or service, has long been  
recognized, laboratory tests of significant nature have been  
difficult to arrange. Work along this line done for navy  
shows considerable promise.

## Milkhouses.

The dairyman builds a milkhouse. By Price Grieve.  
Successful farming. v.40, no.3. March 1942.  
p.24, 44-45.

The farm milkhouse. By Charles H. Reed. Lafayette,  
Ind., 1942. 3p. Indiana. Purdue university.  
Cooperative extension division. Leaflet no.155 (Revised).

## Models.

Determining the deflection of structures with models.  
By William J. Emey. Civil engineering. v.12, no.3.  
March 1942. p.150-151.

## Motor fuels.

Blending tractor fuel with gasoline. Farm implement news.  
v.63, no.1. January 8, 1942. p.40.



Motor fuels. (cont'd.).

Excess sludge gas for motor truck fuel. Sewage works  
engineering. v.13, no.1. January 1942.  
p.15-17. Study of feasibility of using excess gas not  
needed for gas engine operation at plant, (1) for operation  
of garbage collection vehicles, or (2) as fuel under boilers  
of water pumping station.

New developments in tractor fuels and lubricants.  
By C. N. Hinkle. Agricultural engineering.  
v.22, no.11. November 1941. p.393-395.

Now, a real motor fuel from molasses. By William L. Owen.  
Sugar. v.36, no.11. November 1941.  
p.21-23. Called jeamite, it is practically the same  
as gasoline . . Great possibilities seen for sugar by-  
product industry.

Prediction of octane numbers and lead susceptibilities of  
gasoline blends. By DuBois Eastman.  
Industrial and engineering chemistry. v.33, no.12.  
December 1941. p.1555-1560. Methods for  
prediction of octane numbers and lead response  
characteristics of gasoline blends are presented.  
Octane numbers are predicted by means of blending  
coefficient in octane sensitivity between stocks blended.  
Modification of Hobl, Rendel, and Garton chart is pre-  
sented for evaluation of lead response, and correlations  
for prediction of this factor from sulfur content and  
octane sensitivity are given. Methods for prediction of  
lead response of blends are described. It is pointed out  
that all correlations are empirical and should be verified  
before being applied to unusual stocks.

Paints and painting.

For better paint: Methods of testing surface coatings for  
metals have definite place in maintenance. Scientific  
American. v.166, no.2. February 1942.  
P.76-78 Illustrations.

Patents.

New law of patents. By Lee T. Parker. Sewage works  
engineering. v.13, no.1. January 1942.  
p.19-21.

Post control.

Electric light in insect and bacteria control. Agricultural  
engineering. v.22, no.12. December 1942.  
p.439. (1) Germicidal lamps for hydro-cooler waters.  
(2) Control of mold in condenser water. Mold in greenhouses.  
Lighted insect traps. Killing bacteria. Germicidal radia-  
tion. Lamps that attract fewest insects. Black light.  
Purple X lamp.

## Pipes and piping.

Atlanta "retreads" service pipes. By Paul Weir  
Southern power & industry. v.60, no.3. March 1942. p.46-49.  
Atlanta water department has been investigating relative merits of various types of pipe linings during past five years.

Code for pressure piping. By Alfred Iddles. Heating, piping & air conditioning. v.14, no.2. February 1942. p.101-105. Discusses requirements of Section 1 on power piping systems.

Water-distributing systems for buildings. By Roy B. Hunter. Washington, U. S. Govt. print. off., 1941. 25p.  
National bureau of standards. Building materials and structures. Report EMS79. Report gives information relating to selection of pipe sizes and design of distributing systems for adequate supply of water in buildings. It contains flow charts showing capacities of different commercial sizes of pipe in terms of friction loss in head for four degrees of roughness, depending on pipe material and character of water with which pipe is used. Practical procedure is developed for economical selection of pipe sizes for different demands for each part, depending on estimated demand and on pressure available for friction loss as computed for particular service conditions. Suggested variations in procedure provide convenient means of allowing for decrease in capacities of pipes in service.

## Flowing.

Efficiency in tractor ploughing. Engineering. v.152, no.3960. December 5, 1941. p.451-452.

Modern technique in tractor ploughing. Engineering. v.152, no.3960. December 5, 1941. p.456.

## Poultry houses, Heating.

Heating studies of an outdoor breeder. By John B. Greiner. Agricultural engineering. v.22, no.11. November 1941. p.391-392.

## Poultry houses and equipment.

Poultry house foundations. By W. C. Krueger. Everybody's poultry magazine. v.46, no.8. October 1941. p.8.

Revised Penn state 20 by 40 laying house. By R. R. Murphy. Everybody's Poultry magazine. v.46, no.8. October 1941. p.4, 24.  
Construction somewhat more simplified and ventilation greatly improved.



Poultry houses and equipment. (Cont'd)

12 ways to save labor on the poultry farm. By F. H. Leuschner. Everybodys' poultry magazine. v.47, no.1. January 1942. p.8-9, 17-20.

Pumps and pumping.

A short course in pump engineering. Chapter 3 - Measurement of pump discharge and output. By Kenneth R. Frost. Farm implement news. V.63, no.4. January 8, 1942. p.46-48.

Reclamation.

Formation and the reclamation of Thur lands in the Punjab. By M. L. Mehta. Proceedings of the Punjab engineering congress. Lahore, Kapur art printing works. 1940. p.123-j77jj. Paper no.235.

Money for reclamation projects cut 15 percent due to defense needs. Engineering news record. v.127, no.22. November 27, 1941. p.761. Funds for irrigation reduced as war needs shift emphasis in Bureau of reclamation work to power production for industrial use.

Reclamation acreage gains. 610,000 acres added in decade. Reclamation era. v.32, no.3. March 1942. p.60. Table I gives Acreage irrigated by Federal projects (primary or full supply) actually in operation, 1929 and 1939, in the 17 Western States. Table II gives Areas not in Government projects but irrigated with supplemental water supply by Bureau of Reclamation projects; Table III gives Comparison of area irrigated in 1929 and 1939 in the 17 Western States as reported by Census of Irrigation, 1930 and 1940.

Refrigerator lockers.

Food lockers in demand. By Joe Crosby. California Cultivator. v.89, no.3. February 7, 1942. p.80.

Freezer lockers solve storage problem. In Security at the grass roots; a report of cooperative extension work in agriculture and home economics, 1940-41. Washington, D.C., Govt. print. off., 1941. p.12.

Research.

Agricultural and industrial research parallels. By Dr. Anson Hayes. Agricultural engineering. v.23, no.1. January 1942. p.15-18.

Reservoirs.

Solving reservoir problems with circular point-by-point computer.  
By J. M. Shepley and C. B. Walton. Civil engineering.  
V12, no.3. March 1942. p.154-155.

Sewage disposal.

Farm sewage disposal. In annual report of the Maine extension  
Service for year ending June 30, 1941. Orono, Maine,  
1941. p.14-15. Maine. Agricultural extension  
service. Extension bulletin no.299.

Silt.

Method of estimating the maximum possible silt deposit upstream  
of dams constructed in silt-carrying rivers. By Abdel  
Aziz Ahmed. Journal of Institution of civil engineers.  
v.16, no.7. 1940-41. p.399-403.

Missouri river slope and sediment: Discussion. By Messers.  
Leo M. Odem, E. W. Lane and Elliott J. Dent. American  
society of civil engineers. Proceedings. v.67, no.9.  
November 1941. p.1741-1749.

Solar heaters.

Solar water-heating system. By G. Bates. International  
sugar journal. v.43, no.514. October 1941.  
p.309-310.

Specifications.

Form and arrangement of specifications. By Rolf T. Retz.  
Civil engineering. v.12, no.3. March 1942.  
p.135-136. Experience has taught that specifications  
as well as drawings should be clear, neat, and well  
arranged. Poorly written specifications lead to high  
contract prices, unsatisfactory relations between  
engineer and contractor, and shoddy workmanship in  
general. Paper deals only with specifications for  
procuring materials or labor or both, and does not  
cover subject of standard specifications.

Specification standards for government work. Part 2.  
By Harold R. Sleeper, AIA. Architectural record.  
v.91, no.2. February 1942. p.61-64.  
Division 4. Structural steel; Division 5. Roofing &  
sheet metal; Division 6. Miscellaneous metals;  
Division 7. Metal windows & doors; Division 8. Carpentry.

Storage of farm produce.

Hedge against storage losses. By Everett Sandahl.  
Iowa agriculturist. v.42, no.4. November 1941.  
p.6-7.



Storage of farm produce. (Cont'd.)

Improved handling methods for harvesting and storing potatoes.  
In annual report of the Maine extension service for year  
ending June 30, 1941. Orono, Maine, 1941. P.14.  
Maine. Agricultural extension service. Extension bulletin  
no.299.

Sugar beets.

Cooperative work on beet problems. Sugar. v.37, no.2.  
February 1942. p.28-31. Eastern beet sugar in-  
dustry employing method of organized approach to farm through  
agricultural program initiated in 1935. Results called  
worthwhile. Discusses sugar beet machinery.

Swine houses and equipment.

Home-made hog equipment. By J. W. Schwab. Lafayette,  
Ind., 1941. 7p. Indiana. Purdue university.  
Cooperative extension division. Extension bulletin no.199.  
(Revised)

Save your pigs. Hoard's dairyman. v.87. no.2.  
January 25, 1942. p.56. Pig losses can be cut  
approximately one-half by use of simple pig brooder. Another  
simple device prevents their being smothered by sow when she  
lies down next to wall.

Terracing.

Bituminous channels practical for terrace outlets. In what's  
new in farm science. Part 1, annual report of the director.  
Madison, Wis., 1941. p.57. Wisconsin. Agri-  
cultural experiment station. Bulletin no. 453.

Outlet design for terraced lands. By Donald Christy.  
Agricultural engineering. v.23, no.1.  
January 1942. p.12-14.

Textile fibers.

New fiber testing service and apparatus. Rayon textile monthly.  
v.22, no.12. December 1941. p.734. Scientific  
measurements of length, fineness and strength of cotton fibers  
offered by a new cotton testing service inaugurated by univer-  
sity of Tennessee fiber research laboratory of Knoxville, Tenn.

Physical properties of cotton, linen and rayon-mixed fabrics with  
all-linen and all-rayon fabrics. By Hazel M. Fletcher.  
Martha Gene Sheldon and Catharine Eva Zink. Rayon  
textile monthly. v.22, no.12. December 1941.  
p.735-737.



Textile fibers. (Cont'd)

Physical properties of cotton, linen and rayon-mixed fabrics compared with all-linen and all-rayon fabrics. By Hazel M. Fletcher, Martha Gene Sheldon and Catherine Eva Zink.  
Rayon textile monthly. v.23, no.1. January 1942.  
p.71-72.

Ramie fibre and its potentialities. By Dr. J. W. Brown.  
Fibres & fabrics journal. v.7, no.10. October 1941.  
p.10-11.

Textile fiber atlas. By Werner Von Bergon and Walter Krauss.  
Rayon Textile monthly. v.21, no.12. December, 1940.  
p.739-742. Part 10. Structural fibers.

Textile research problems suggested by the industry. Rayon textile monthly. v.23, no.12. December, 1941.  
p.710-713. Textile research problems of special interest to rayon and synthetic yarn producers, manufactureres, mills and processors.

Tires.

Amount of water and solution for various size tires. (Table)  
Implement record. v.39, no.2. February 1942.  
p.66.

Selection of earth-moving tires for better performance and economy.  
By Walter Lee. SAE journal. v.50, no.3.  
March 1942. p.73-79. During past five years, great strides have been taken in development of l rge tires to carry tremendous loads over rough terrain at speeds up to 25 mph. Truly these gigantic tires are earth movers. Larger ones weigh over ten and have carrying capacities well over 15 tons. In addition to just carrying these unbelievably large loads, these tires must do it without sinking in. They must actually float over soft, freshly filled-in earth. In other words, good earth-mover tire must possess quality of "flotation," as well as ability to carry these gigantic loads. Maximum resistance to cutting and avrasien, good traction, and ability to withstand heat are all qualities to be incorporated for certain types of earth-moving jobs. It is not advisable or economical to have all these qualities built into one tire to maximum degree. Therefore, in selecting earth-mover tire for particular type of job, consideration must be given to each of foregoing qualities. Type of tire finally chosen must incorporate these qualities most needed for particular kind of earth-moving job to be done.

Tobacco

White burley tobacco. By Lester S. O'Bannon. Mechanical engineering. v.64, no.3. March 1942,  
p.187-192.



## Tractors.

A-3 priority and tennage allocation granted for tractors and implements. Farm implement news. v.63, no.1.  
January 8, 1942, p.50-52.

Complete table showing tractors on farms as reported by U. S. Census bureau. Farm implement news. v.62, no.20.  
October 2, 1941. p.38.

Farm tractor gains in loading states. Farm implement news. v.62, no.20. October 2, 1941. p.39.  
Table shows net increase in the number of farm tractors from 1930 to 1940 (U. S. Census), for seventeen loading tractor states, those that reported over 40,000 tractors each as of April 1, 1940.

Most from a gallon of gas. By C. N. Hinkle. Successful farming. v.40, no.1. January 1942. p.20, 26.  
How the average tractor owner can save money.

Tracer stop-hitches. By A. W. Clyde. Agricultural engineering. v.23, no.1. January 1942.  
p.5-8.

## Ventilation.

Poultry ventilation problem. By Dr. M. W. Emmel. Agricultural engineering. v.22, no.12. December 1941.  
p.435-436.

Right amount of air for cow in any climate. Wisconsin agriculturist. v.69, no.1. January 10, 1942. p.12.

Trade old air for new. By Don Schwendemann. Iowa agriculturist. v.42, no.5. December 1941.  
p.4, 13. Cold winter winds bring problems in heating and ventilation to farmers who plan for high production during bad weather.

You can ventilate that stable. By Ralph J. Bugbee. Electricity on the farm. v.14, no.11. November 1941.  
p.5-7.

## Walls.

Bending moments in the walls of rectangular tanks. By Dana Young. American society of civil engineers. Proceedings. v.67, no.9. November 1941. p.1683-1696.  
Attempt is made to obtain theoretical solution for deflection and moments in vertical side walls of rectangular tank which is open at top. More precisely, formal analysis is made of rectangular plate that is entirely free or unsupported at top, perfectly fixed along sides and bottom and subjected to transverse hydrostatic loading. In certain cases, walls of



Walls. (Cont'd.)

rectangular tank may be considered to act as plate with these idealized edge conditions, and it is only in such cases that this analysis applies. For tank that is square in plan and with heavy base, perfected fixity at sides and bottom would be closely approached. If one horizontal dimension is much greater than other, assumed edge conditions would not prevail. This analysis may be said to furnish solution for idealized case and designer must use judgement in applying results to particular problem.

Crib wall model tests indicate new design assumptions required.  
By Charles U. Prout. Engineering news record.  
v.127, no.19. November 6, 1941. p.667-668.

Small retaining walls. By Al. C. Brinchman.  
Architect and engineer. v.147, no.3. December  
1941. p.45-46.

Water heaters.

Electric tank heaters. By Truman Hienton. Successful  
farming. v.40, no.2. February 1942. p.34, 40.

Electric water warmers for poultry. By I. R. Blauser.  
Rural electrification exchange. v.5, no.1. First  
Quarter, 1942. p.10,17.

Hot water for the farm home. By Hobart Beresford. Idaho  
farmer. v.60, no.1. January 1, 1942, p.8.

Water supply.

Big waters on little streams. By Albert S. Fry. Agri-  
cultural engineering. v22, no.12. December 1941.  
p.424-426.

Conservation of Ohio's water resources. By Wilber Stout.  
Engineering experiment station news. Ohio state university.  
v.13, no.5. December 1941. p.6-9.

Stream flow during the 1941 climatic year. By C. V. Youngquist.  
Engineering experiment station news. Ohio state university.  
v.13, no.5. December 1941. p.10-12.

Surface and underground water of Ohio. By Wilber Stout,  
C. V. Youngquist, and R. E. Lamborn. Columbus, Ohio,  
1942. 20p. Ohio. Engineering experiment station.  
Circular no.43.

Water possibilities. By George M. Foulkrod. New  
England homestead. v.114, no.24. November 29, 1941.  
p.5,9.



Water Supply Rural.

How successful promotion of water systems helped customers increase farm production. Rural electrification exchange. v.5, no.1. First Quarter, 1942. p.8-9,20.

Running water for farm and home. In annual report of the Maine extension service for year ending June 30, 1941. Orono, Maine, 1941. p.14. Maine, Agricultural extension service. Extension bulletin no.299.

Weeds.

Chemical war on weeds. By Frank J. Taylor. Country gentleman. v.112, no.2. February 1942. p.7, 57-58. New herbicides are almost miraculous eliminators of plant pests that rob farmers of three billion dollars a year.

Kansas "blitzes" the bindweed. Implement & tractor. v.57, no.2. January 17, 1942. p.8-9. Intensive cultivation is reducing this common agricultural hazard to the status of a minor pest. Tests indicate that crop yields improve.

The menace of weeds. By R. J. Evans. Farm and home science. v.3, no.1. March 1942. p.11. Weeds steal the farmers' profits by reducing quality and quantity of crops produced.

Place of weeds in soil erosion control. By K. G. Carn. Agricultural gazette of New South Wales. v.52, pt.10. October 1, 1941. p.516,529.

Representative Missouri weeds and their control. By W. B. Drew and C. A. Helm. Columbia, Missouri, 1941. 216p. Missouri. Agricultural experiment station. Bulletin no.433.

Weed control with oil. California citrograph. v.26, no.12. October 1941. p.370. Further ideas on "weedless cultivation" method being used by some growers.

Weed-control work active. In Security at the grass roots; a report of cooperative extension work in agriculture and home economics, 1940-41. Washington, D. C., Govt. print. off., 1941. p.26.